<u>REMARKS</u>

Claims 1, 3-16, 18-30 and 32-42 stand rejected. Claims 1, 9, 14, 16, 18, 22 are amended, claims 3-4, 11-12, 23-30, 32-39 are cancelled without prejudice, and claims 43-58 are added. Claims 1, 5-10, 13-16, 18-22, and 40-58 are pending in the present application.

The Examiner's reconsideration of the claim rejections is respectfully requested in view of the above amendment and the following remarks.

Newly Added Claims 43-58

Newly added claims 43-58 are believed to be patentable over U.S. Patent No. 6,622,300 to <u>Krishnaswamy</u>, U.S. Patent No. 5,590,354 to <u>Klapproth</u>, U.S. Patent No. 5,355,484 to <u>Record</u>, the Dictionary of Computing 26, 432 (Oxford Univ. Press, 4th ed. 1996) (herein "Computing"), Using Profile Information to Assist Classic Code Optimizations, 21(12) Software: Practice and Experience 1301-1321 (Dec. 1991) (hereinafter "Chang"), and Dynamic Compilation for 100% Architectural Compatibility, Proc. of the 24th Annual International Symposium on Computer Architecture (ISCA), 26-37 (June 1997) (herein after "Altman).

For example, at the very least, the above references do not disclose or suggest a *profile matrix controller [within a CPU that] is configured to receive an event identifier (EID) of an event associated with one of the profiled computer programs and an associated profile value, wherein the EID includes an index to address an element of [a] profile matrix and a tag to indicate whether a profile count for the EID is present within the profile matrix, the profile matrix [being] separate and independent from the ... CPU,* as essentially recited in added claim 43.

Different from the profile matrix of claim 43, which is <u>separate and independent</u> from its CPU, <u>Krishnaswamy</u> (in FIG. 2, col. 4, lines 27-32 and col. 6, lines 22-28) teaches a PMU 90 <u>within</u> a CPU 60 that stores data associated with events (such as a cache miss) in a counter within the CPU 60. Further, as discussed above, the profile matrix controller of claim 43 receives (1) an EID including an (a) index to address an element of the profile matrix and (b) a tag to indicate whether a profile count for the EID is present within the profile matrix, and (2) a profile value. However, <u>Krishnaswamy</u> is silent on the precise format of data received by its PMU 90.

<u>Klapproth</u> merely teaches (in FIG. 1) a probe 38, which includes a trace memory 40 to store trace information. Unlike the profile matrix controller of claim 43, <u>Klapproth's</u> probe 38 merely traces triggered events. <u>Klapproth's</u> probe 38 does not receive an EID including an index to address an element of a profile matrix and a tag to indicate whether a profile count for the EID is present within the profile matrix, essentially as claimed. Consider that <u>Klapproth</u> is specific on this point; the trace information does not include information at an instruction address granularity (see col. 3, lines 32-44). Further, the profile matrix of claim 43 is <u>external</u> to the profile matrix controller, while the trace memory 40 of <u>Klappoth</u> is <u>internal</u> to the probe 38.

Unlike the profile matrix controller of claim 43, which is within a CPU and stores event data within a profile matrix external to the CPU, <u>Record</u> teaches (in col. 42, lines 7-11) use of a software event monitor/handler within a control program of the operating system for the purpose of recording event signals in a spool file. Further, the profile matrix of claim 43 is separate and independent from the CPU, main memory, and cache hierarchy, while <u>Record</u> is silent about the location of its spool file.

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Thus, Krishnaswamy, Klappoth, and Record fail to disclose or suggest a *profile matrix controller [within a CPU that] is configured to receive an event identifier (EID) of an event associated with one of the profiled computer programs and an associated profile value, wherein the EID includes an index to address an element of [a] profile matrix and a tag to indicate whether a profile count for the EID is present within the profile matrix, the profile matrix [being] separate and independent from the ... CPU,* as recited in claim 43. Further the deficiencies of Krishnaswamy, Klappoth, and Record in this regard is not cured by Computing, Chang, or Altman.

Thus, claim 43 is believed to be patentable over the cited references.

Claims 44-58 are believed to be patentable over the cited references in their own right and by virtue of their dependence from claim 43.

Current Rejections

A. Claims 1, 4-8, 11-13, 16, 22, and 38 stand rejected under 35 U.S.C. § 102(e) as being unpatentable over Krishnaswamy.

B. Claims 1, 4-8, 11-13, 16, 22, and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Krishnaswamy in view of Klapproth.

Krishnaswamy and Klapproth do not disclose or suggest, *executing, by the processor, each of the computer programs to generate a event identifier (EID) for each program, the EID comprising an index and a tag of a profiled event of the computer program,* as essentially recited in amended claim 1.

For example, there is no teaching in Krishnaswamy of its CPU 60 or in Klapproth of its microcontroller 20 generating an event identifier (EID) for a program, wherein the EID includes an index and a tag of a profiled event of the computer program. Indeed, as

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stated above, Krishnaswamy is silent on the precise format of data received by its PMU 90, while Klapproth's probe 38 merely traces triggered events without any index or tag of a profiled event.

Thus, Krishnaswamy and/or Klapproth do not disclose or suggest, *executing, by the processor, each of the computer programs to generate a event identifier (EID) for each program, the EID comprising an index and a tag of a profiled event of the computer program*, as essentially recited in claim 1.

Accordingly, claim 1 is believed patentable over Krishnaswamy and/or Klapproth.

Claims 4, 11-12, and 38 are cancelled without prejudice.

Claims 5-8, 13, 16, 22 are believed patentable over Krishnaswamy and Klapproth at least by virtue of their dependence from claim 1.

C. Claims 3, 9-10, 23-30, 32-34, 37, and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Krishnaswamy in view of Computing.

D. Claims 3, 9-10, 23-30, 32-34, 37, and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Krishnaswamy in view of Klapproth in view of Dictionary.

Claims 3, 23-30, 32-34, 37 and 39 are cancelled without prejudice.

The rejections of claims 9-10 are premised on Krishnaswamy and/or Klapproth disclosing or suggest all of the limitations of claim 1. However, as discussed above Krishnaswamy and/or Klapproth do not disclose or suggest *executing, by the processor, each of the computer programs to generate a event identifier (EID) for each program, the EID comprising an index and a tag of a profiled event of the computer program*.

Moreover, the deficiencies of <u>Krishnaswamy</u> and <u>Klapproth</u> in these regard are not cured by <u>Computing</u>. Thus, any combination of <u>Krishnaswamy</u>, <u>Klapproth</u>, and <u>Computing</u> cannot render obvious claims 9-10.

E. Claims 40 and 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over <u>Krishnaswamy</u> in view of <u>Chang</u>.

F. Claims 40 and 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over <u>Krishnaswamy</u> in view of <u>Klapproth</u> in view of <u>Chang</u>.

However, <u>Krishnaswamy</u> and <u>Klapproth</u> do not disclose or suggest executing, <u>by the processor, the</u> computer <u>programs to generate a event identifier (EID) for each program, the EID comprising an index to access an element of the profile matrix and a tag to determine whether the element corresponds to a profile count of the profile matrix</u>, as recited in claim 40, for at least the same reasons as discussed above for claim 1. Further, the deficiencies of <u>Krishnaswamy</u> and/or <u>Klapproth</u> in this regard are not cured by <u>Chang</u>. Thus, claim 40 is believed to be patentable over <u>Krishnaswamy</u>, <u>Klapproth</u>, and <u>Chang</u>.

Claim 42 is believed to be patentable over <u>Krishnaswamy</u>, <u>Klapproth</u>, and <u>Chang</u> at least by virtue of its dependence from claim 40.

G. Claims 14-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over <u>Krishnaswamy</u> in view of Record et al. (U.S. Patent No. 5,355,484) (hereinafter "<u>Record</u>")

H. Claims 14-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over <u>Krishnaswamy</u> in view of <u>Klapproth</u> in view of <u>Record</u>.

The rejections of claims 14-15 are premised on <u>Krishnaswamy</u> and <u>Klapproth</u> disclosing or suggesting base claim 1. However, as discussed above, <u>Krishnaswamy</u> and <u>Klapproth</u> do not disclose or suggest all of the limitations of claim 1. For example, <u>Krishnaswamy</u> and <u>Klapproth</u> do not disclose or suggest *executing, by the processor, each of the computer programs to generate a event identifier (EID) for each program, the EID comprising an index and a tag of a profiled event of the computer program.* Further, the deficiencies of <u>Krishnaswamy</u> and <u>Klapproth</u> in this regard are not cured by <u>Record</u>.

Thus, the combination of <u>Krishnaswamy</u>, <u>Klapproth</u>, and <u>Record</u> cannot render obvious claims 14-15.

I. Claims 18-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over <u>Krishnaswamy</u> in view of Altman et al. "DAISY: Dynamic Compilation for 100% Architectural Compatibility" (hereinafter "<u>Altman</u>")

J. Claims 18-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over <u>Krishnaswamy</u> in view of <u>Klapproth</u> in view of <u>Altman</u>.

The rejections of claims 18-19 are premised on <u>Krishnaswamy</u> and <u>Klapproth</u> disclosing or suggesting base claim 1. However, as discussed above, <u>Krishnaswamy</u> and <u>Klapproth</u> do not disclose or suggest all of the limitations of claim 1. For example, <u>Krishnaswamy</u> and <u>Klapproth</u> do not disclose or suggest *executing, by the processor, each of the computer programs to generate a event identifier (EID) for each program, the EID comprising an index and a tag of a profiled event of the computer program.* Further, the deficiencies of <u>Krishnaswamy</u> and <u>Klapproth</u> in this regard are not cured by <u>Altman</u>.

Thus, the combination of Krishnaswamy, Klapproth, and Altman cannot render obvious claims 18-19.

K. Claims 20-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Krishnaswamy in view of Altman in view of Chang.

L. Claims 20-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Krishnaswamy in view of Klapproth in view of Altman in view of Chang.

The rejections of claims 20-21 are premised on Krishnaswamy and Klapproth disclosing or suggesting base claim 1. However, as discussed above, Krishnaswamy and Klapproth do not disclose or suggest all of the limitations of claim 1. For example, Krishnaswamy and Klapproth do not disclose or suggest *executing, by the processor, each of the computer programs to generate a event identifier (EID) for each program, the EID comprising an index and a tag of a profiled event of the computer program.* Further, the deficiencies of Krishnaswamy and Klapproth in this regard are not cured by Altman or Chang.

Thus, any combination of Krishnaswamy, Klapproth, Altman, and Chang cannot render obvious claims 20-21.

M. Claims 35-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Krishnaswamy in view of Dictionary in view of Record.

N. Claims 35-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Krishnaswamy in view of Klapproth in view of Dictionary in view of Record.

Claims 35-36 are cancelled without prejudice.

O. Claim 41 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Krishnaswamy in view of Chang in view of Altman.

P. Claim 41 rejected under 35 U.S.C. § 103(a) as being unpatentable over Krishnaswamy in view of Klapproth in view of Chang in view of Altman.

The rejection of claim 41 is premised on Krishnaswamy and Klapproth disclosing or suggesting base claim 40. However, as discussed above, Krishnaswamy and Klapproth do not disclose or suggest all of the limitations of claim 40. For example, Krishnaswamy and Klapproth do not disclose or suggest executing, by the processor, the computer programs to generate a event identifier (EID) for each program, the EID comprising an index to access an element of the profile matrix and a tag to determine whether the element corresponds to a profile count of the profile matrix. Further, the deficiencies of Krishnaswamy and Klapproth in this regard are not cured by Chang or Altman.

Thus, any combination of Krishnaswamy, Klapproth, Altman, and Chang cannot render obvious claim 41.

For at least the foregoing reasons, Applicants' respectfully request withdrawal of the rejections under 35 U.S.C 102(e) and 35 U.S.C. 103(a).

In view of the foregoing remarks, it is respectfully submitted that all the claims now pending in the application are in condition for allowance. Early and favorable reconsideration is respectfully requested.

Respectfully submitted,

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